

## PEST MANAGEMENT PRACTICES

for the complete report see <http://usda.mannlib.cornell.edu/reports/nassr/other/pest/>

Information presented here is based on data compiled from a survey conducted in the Fall of 1999. All results refer to responses from sampled producers concerning specific practices. The producers were asked how many acres of a specific commodity they had and what pesticide management practices they used. The producers were asked a series of questions to which they responded yes or no. Pests were defined as weeds, insects, and diseases. If the respondent used a specific practice on a crop, it was assumed that the practice was used on all of the acres of that crop. For example, if a producer had 500 acres of wheat, and used field mapping of previous weed problems to assist in making weed management decisions, it was assumed that all 500 acres were mapped.

Each question has been categorized into one of four pest management categories: prevention, avoidance, monitoring, and suppression.

The data are published in two tables for each crop: percent of acres receiving the specific pest management practice and percent of farms using the specific pest management practice. These percentages are published at the U.S. and regional level. For barley, corn, soybeans, wheat, fruits and nuts, vegetables, and all other crops and cropland pasture, the percentages refer only to farms and planted acres. For alfalfa hay and other hay, the percentages refer only to farms and harvested acres. A single asterisk in the table means there were too few reports to publish the percentage while a double asterisk means the percentage is less than one percent. A dash indicates there were no reports of the practice being used.

**Prevention** is the practice of keeping a pest population from infesting a crop or field. It includes such tactics as using pest-free seeds and transplants, preventing weeds from reproducing, choosing cultivars with genetic resistance to insects or disease, irrigation scheduling to avoid situations conducive to disease

development, cleaning tillage and harvesting equipment between fields or operations, using field sanitation procedures, and eliminating alternate hosts or sites for insect pests and disease organisms.

**Avoidance** may be practiced when pest populations exist in a field or site but the impact of the pest on the crop can be avoided through some cultural practice. Examples of avoidance tactics include crop rotation such that the crop of choice is not a host for the pest, choosing cultivars with genetic resistance to pests, using trap crops, choosing cultivars with maturity dates that may allow harvest before pest populations develop, fertilization programs to promote rapid crop development, and simply not planting certain areas of fields where pest populations are likely to cause crop failure. Some tactics for prevention and avoidance strategies may overlap.

**Monitoring** includes proper identification of pests through surveys or scouting programs, including trapping, weather monitoring, and soil testing where appropriate.

**Suppression** tactics include cultural practices such as narrow row spacings or optimized in-row plant populations, alternative tillage approaches such as no-till or strip-till systems, cover crops or mulches, or using crops with allelopathic potential in the rotation. Physical suppression tactics may include cultivation or mowing for weed control, baited or pheromone traps for certain insects, and temperature management or exclusion devices for insect and disease management. Biological controls, including mating disruption for insects, could be considered as alternatives to conventional pesticides, especially where long-term control of an especially troublesome pest species can be obtained. Chemical pesticides are important and some use will remain necessary. However, pesticides should be applied as a last resort in suppression systems.

**Pest Management Practices, Northeast <sup>1/</sup>, 1999**

PRACTICE	Percent of Acres Receiving Practice						Percent of Farms Utilizing Practice					
	Barley	Field Corn	Alfalfa Hay	Other Hay	Fruits & Nuts	Vegetables	Barley	Field Corn	Alfalfa Hay	Other Hay	Fruits & Nuts	Vegetables
	Percent of Acres						Percent of Farms					
<b>Prevention Practices:</b>												
Tillage/etc. to manage pests	65	39	30	12	90	79	37	44	37	14	83	49
Remove or plow down crop residue	49	36	8	3	13	62	24	28	7	4	12	43
Clean implements after fieldwork	18	41	33	11	46	51	27	41	34	11	51	31
Water management practices	*	8	4	**	3	47	*	4	3	1	2	13
<b>Avoidance Practices:</b>												
Crop varieties genetically modified to resistant insects	*	11	**	--	**	**	**	21	**	--	*	**
Adjust planting/harvesting dates	5	10	7	2	*	35	3	7	5	3	*	28
Rotate crops to control pests	54	67	48	10	6	86	78	59	47	11	8	67
Crop varieties genetically modified to be pathogen/nematode resistant	--	**	**	**	*	--	--	**	**	**	*	--
Alternate planting locations	*	15	3	**	24	33	**	9	5	2	15	21
Grow trap crop to control insect	-	**	-	-	*	**	-	**	-	-	*	*
<b>Monitoring Practices:</b>												
Scouted for pests	35	52	34	4	90	91	33	36	26	5	81	47
Records kept to track pests	39	20	11	1	19	58	15	10	8	2	19	21
Field mapping of weed problems	6	16	5	1	13	25	9	9	4	2	9	4
Soil analysis to detect pests	17	12	4	2	16	44	7	6	2	2	10	9
Pheromones to monitor pests	--	**	**	**	3	10	--	**	**	**	4	2
Weather monitoring	15	24	9	1	66	51	8	16	8	2	59	31
<b>Suppression Practices:</b>												
Crop varieties genetically modified to be herbicide resistant	*	3	**	**	--	*	*	9	**	**	--	*
Scouting used to make decisions	10	17	10	**	23	65	9	7	7	**	17	25
Biological pesticides	**	5	*	--	3	19	*	3	*	--	3	12
Beneficial organisms	*	*	*	--	20	14	**	**	**	--	11	1
Physical barriers	*	16	4	2	41	44	*	12	4	2	34	27
Adjust planting methods	*	5	**	**	**	10	**	4	**	**	*	19
Alternate pesticides	15	46	19	1	76	76	11	34	16	2	65	40
Pheromones to disrupt mating	--	**	--	--	*	*	--	**	--	--	*	**

<sup>1/</sup> New England, New York, New Jersey, Pennsylvania, Maryland, Delaware

\*Insufficient reports to publish data \*\* Less than 1 percent